



UNITED STATES PATENT AND TRADEMARK OFFICE

A

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,512	02/05/2004	Gennadij Kusnezow	029146.53143US	9425
23911	7590	12/27/2005	EXAMINER	
CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300			NGUYEN, TUAN N	
			ART UNIT	PAPER NUMBER
			2828	

DATE MAILED: 12/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/771,512	KUSNEZOW, GENNADIJ	
	Examiner	Art Unit	
	Tuan N. Nguyen	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02/05/2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>02/05/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. New corrected drawings are required in this application because it is not acceptable to the draftsman, see the attached Notice of Draftsman drawing review

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or non-obviousness.
3. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yin (US 6229829).

With respect to claim 1, Yin '829 discloses and shows a laser configuration having resonator-internal frequency conversion, comprising a laser resonator having a first arm (Fig 5, 6: first arm M1, second harmonic crystal SHG, third THG, fourth FHG, prism PR3, QS, lasing medium LM, mirror M2) formed by a first reflector (Fig 6: mirror M1), an active medium and an

Art Unit: 2828

output device (Fig 6: lasing medium crystal LM), and a second arm formed by a second reflector (Fig 6: second arm formed by second reflector -mirror M23), the output device comprising an optical prism into which the frequency-converted output beam is input and can be output on an output surface in the direction of the output axis (Fig 6: prism PR4 outputting 2, 3, 4); an output device (Fig 6: prism PR4 outputting 2, 3, 4) and the output axis and an optical axis of the first arm being parallel to each other (Fig 6: arm one "PR3, SQ LM" is parallel to arm two "M23, PR4"). The claim further require a frequency converter in the second arm and wherein the optical prism is designed so that the frequency-converted output beam can be output on the output surface after internal reflection on at least one total reflection surface, and the laser resonator having a length equal to the sum of the lengths of the first and second arms. Yin '892 did not shows or discreetly disclose a frequency converter prism in the second arm or the laser resonator having a length equal to the sum of the lengths of the first and second arms. However Yin'892 did shows and discloses the use of non-linear crystal for frequency conversion (ABSTRACT), and prism having reflection surface (FIG 5, 6: prism PR3) to output second, third, fourth harmonic. It has been held that omission of an element in a combination where the remaining elements perform the same functions as before, and/or it has been held that mere rearranging duplication parts of an invention involves only routine skill in the art, as disclosed by Yin Yin '829 (Col 10: 13-20 discloses the foregoing illustrate only the principles to various possible configuration, since numerous changes and modification will occur to those skill in the art). *In re Karlson*, 136 USPQ 184, and *In re Japikse* 86 USPQ 70.

With respect to claims 2, 4, the claim further require wherein the prism has exactly one total reflection surface, and wherein the prism has two total reflection surfaces, with a given angle of entry and exit parameters for the beam. It has been held that where the general conditions of a claim are disclosed in the prior art which is the optical prism, disclosing the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

With respect to claim 3, Yin '829 discloses wherein an entry surface and an emergence surface of the optical prism enclose the Brewster angle (.beta.) relative to the beam axis (Col 6: 35-40 Brewster angle).

With respect to claims 5, 6 the claims further require the frequency converter generates a second harmonic and the frequency converter is provided with a combined delay chip for generating a third or fourth harmonic. Yin '829 did not discloses a delay chip for generating third or fourth harmonic, however Yin '829 did discloses the use of non linear crystal and reflectors to produce second, third, fourth harmonic (Col 4: 45-67) (Col 5: 1-65 second, third, fourth harmonic) (Col 10: 13-20 discloses the foregoing illustrate only the principles to various possible configuration). It has been held that omission of an element in a combination where the remaining elements perform the same functions as before involves only routine skill in the art, since numerous changes and modification will occur to those skill in the art. *In re Karlson*, 136 USPQ 184.

Communication Information

Art Unit: 2828

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (571) 272-1948. The examiner can normally be reached on M-F: 7:30 - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harvey Minsun can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan N. Nguyen

